CLAIMS:

1.   A method for determining errors and metrics in a computer network, comprising:

positioning an analyzer in communication with the network;

capturing a data trace of the network with the analyzer;

determining a network device topology from a first processing of the data trace;

building user layer protocols using a second processing of the data trace and the determined device topology;

determining errors in the network device topology using protocol experts applied to the user layer protocols in conjunction with the determined device topology; and

displaying at least one of the device topology and the determined errors to a user.

2.   The method of claim 1, wherein capturing the trace data comprises capturing and storing trace data for a first channel and a second channel of the analyzer, the data for the first and second channels being stored independently.

3.   The method of claim 1, wherein building the user layer protocols comprises:

a) stripping a specific protocol layer from a data sample;

b) sending the specific protocol layer from the data sample to a software expert configured to analyze the specific protocol layer; and

c) repeating steps (a) and (b) until each protocol layer of the data sample has been processed by a designated software expert.

4.   The method of claim 1, wherein determining the network device topology comprises analyzing channelized captured trace data to extrapolate information indicative of loops, switches, and switched loops.

5.　　The method of claim 1, wherein determining errors further comprises determining warnings.

6.　　The method of claim 1, wherein determining errors further comprises determining at least one performance metric related to the determined topology and the specific user layer protocol.

7.　　The method of claim 1, wherein displaying at least one of the device topology and the determined errors to a user comprises displaying a graphical user interface (GUI) to the user, wherein the GUI is configured to receive input from the user to adjust a processing window in the data trace.

8.　　The method of claim 7, further comprising displaying the determined network device topology.

9.　　The method of claim 7, further comprising displaying at least one of an error log, a metrics graph view, and a report view.

10.　　A method for determining errors, metrics, and warnings for a data network, comprising:

　　　　collecting a plurality of data traces from the data network with a plurality of network analyzers;

　　　　determining a topology of the data network via analysis of a combination of the plurality of data traces;

　　　　processing the combination of the plurality of data traces in conjunction with the determined topology to rebuild user layer protocols;

　　　　processing individual protocols to determine errors, warnings, and metrics for the particular protocol; and

　　　　displaying the errors, warnings, and metrics to the user via a graphical interface.

11.   The method of claim 10, wherein collecting data traces further comprises selectively positioning the plurality of analyzers to capture data traveling between targets and initiators.

12.   The method of claim 10, wherein determining topology comprises stepping through channelized data stored from the plurality of data traces to extrapolate information therefrom that indicates the presence of specific network devices.

13.   The method of claim 10, wherein processing to rebuild user layer protocols comprises stripping each protocol layer from a data sample, analyzing the stripped protocol layer with an expert configured to analyze the stripped protocol layer, and sending the remaining portions of the data sample to additional protocol experts for analysis and forwarding of the data sample until each layer of the data sample has been analyzed by an appropriate protocol layer expert.

14.   The method of claim 13, wherein processing individual protocols to determine errors for the particular protocol further comprises comparing protocol specific commands to protocol standards to determine if an error has occurred.

15.   The method of claim 10, wherein displaying comprises displaying at least one of a graphical metric view, a topology view, and an error log view to a user.

16.   The method of claim 10, wherein processing protocols further comprises filtering the data traces to eliminate data that cannot accurately analyzed given the utilized analyzer placement.

17.   A method for analyzing a network for errors, comprising:
        capturing at least one bidirectional data trace from the network;
        analyzing the bidirectional data trace to extrapolate information indicative of network topology;

analyzing individual data samples from the data trace using the network topology to rebuild user layer protocols for the individual data sample; and

determining errors in the network using the network topology, the user layer protocols, and standards for the particular user layer protocols.

18. The method of claim 17, wherein rebuilding the user layer protocols comprises:

stripping a specific protocol layer from a data sample;

sending the specific protocol layer from the data sample to a software expert configured to analyze the specific protocol layer; and

repeating the stripping and sending until each protocol layer of the data sample has been processed by a designated software expert.

19. The method of claim 17, wherein determining errors comprises:

processing the data trace with protocol experts that compare the progression of the data trace to an expected progression result based upon protocol standards; and

determining an error when the progression of the data trace varies from the expected progression.

20. The method of claim 17, further comprising displaying the determined errors to the user in via a graphical user interface.

21. The method of claim 20, further comprising calculating and displaying network performance metrics to the user.

22. The method of claim 17, wherein determining errors further comprises filtering the data trace to eliminate data that is not accurately represented as a result of analyzer position.